SANTA CRUZ BIOTECHNOLOGY, INC.

ALDH3B1 siRNA (h): sc-96544

BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate the $NADP^+$-dependent oxidation of aldehydes into acids and play an important role in the detoxification of alcohol-derived acetaldehyde, as well as in lipid peroxidation and in the metabolism of corticosteroids, biogenic amines and neurotransmitters. ALDH3B1 (aldehyde dehydrogenase 3 family, member B1), also known as ALDH4 or ALDH7, is a 468 amino acid protein that belongs to the alcohol dehydrogenase family and is involved in the pathway of ethanol degradation. Expressed at high levels in lung and kidney tissue, ALDH3B1 catalyzes the $NADP^+$-dependent conversion of an aldehyde, ethanol, to an acid, acetate, a key reaction in the metabolism of alcohol. Multiple isoforms of ALDH3B1 exist due to alternative splicing events.

REFERENCES

1. Hsu, L.C., et al. 1994. Cloning of a cDNA encoding human ALDH7, a new member of the aldehyde dehydrogenase family. Gene 151: 285-289.
2. Hsu, L.C., et al. 1997. Human aldehyde dehydrogenase genes, ALDH7 and ALDH8: genomic organization and gene structure comparison. Gene 189: 89-94.
3. Yoshida, A., et al. 1998. Human aldehyde dehydrogenase gene family. Eur. J. Biochem. 251: 549-557.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 600466. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Sun, X., et al. 2005. Multi-locus association study of schizophrenia susceptibility genes with a posterior probability method. Sci. China, C, Life Sci. 48: 263-269.
6. Marchitti, S.A., et al. 2007. Expression and initial characterization of human ALDH3B1. Biochem. Biophys. Res. Commun. 356: 792-798.

CHROMOSOMAL LOCATION

Genetic locus: ALDH3B1 (human) mapping to 11q13.2.

PRODUCT

ALDH3B1 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ALDH3B1 shRNA Plasmid (h): sc-96544-SH and ALDH3B1 shRNA (h) Lentiviral Particles: sc-96544-V as alternate gene silencing products.

For independent verification of ALDH3B1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-96544A, sc-96544B and sc-96544C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ALDH3B1 siRNA (h) is recommended for the inhibition of ALDH3B1 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ALDH3B1 gene expression knockdown using RT-PCR Primer: ALDH3B1 (h)-PR: sc-96544-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.